

Title (en)  
REMOVABLE CIRCUIT BOARD WITH DUCTED COOLING

Title (de)  
STECKBARE SCHALTUNGSPLATINE MIT KÜHLLUFTFÜHRUNG

Title (fr)  
CARTE DE CIRCUITS A CANAL DE REFROIDISSEMENT

Publication  
**EP 0893042 A1 19990127 (EN)**

Application  
**EP 97921135 A 19970410**

Priority  
• US 9705949 W 19970410  
• US 1525896 P 19960410

Abstract (en)  
[origin: WO9738566A1] An active cooling arrangement for a removable circuit board (10) installed within a host computer, where the board has one or more components (31, 32) generating excessive heat, for which a duct defines an air-cooling path which includes the one or more components. The path has a duct (30) with an open side proximate to the circuit board so that the circuit board defines one boundary of the air-cooling path. An inlet (18) is provided for injecting cooled air onto the circuit board and an outlet (19) is provided for ejecting the air. The circuit board and the duct constitute an assembly. A fan or fans (12, 13) may be mounted on the assembly, and located so as to cause airflow along the path from the inlet to the outlet. The duct may have multiple constriction points (22, 23, 24, 25, 26, 27) near hot locations so that the cross-sectional area of the duct is variable along the air-cooling path, thus adjusting air velocity and heat transfer from components to the air. The duct may also be segmented into airflow regions having separate air-intake and fan arrangements (12, 13). Power may be received from the circuit board (29) or from an external power source (37), and the system may be formed from injection molded plastic.

IPC 1-7  
**H05K 7/20; H02B 1/00**

IPC 8 full level  
**H05K 7/20** (2006.01)

CPC (source: EP US)  
**H05K 7/20145** (2013.01 - EP US); **H05K 7/20154** (2013.01 - EP US)

Citation (search report)  
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